REMARKS

In reply to the Office Action dated September 20, 2004, claims 35-36 and 62-65 are under examination in the Application. By the above amendment, claims 35, 62, 63 and 65 have been amended and claim 66 has been added. New claim 66 is drawn to a method for stimulating and/or expanding T cells using a polypeptide comprising SEQ ID NO: 337, which is subject matter acknowledged by the Examiner as being enabled by the specification. The above claim amendments are not to be construed as acquiescence to the stated grounds for rejection and are made without prejudice to prosecution of any subject matter modified and/or removed by this amendment in a related divisional, continuation and/or continuation-in-part application.

Specification

The title of the invention stands objected to for allegedly not being descriptive of the subject matter of the elected invention. Without acquiescing to this objection, Applicants have amended the title of the application to be drawn to --METHODS FOR STIMULATING AND/OR EXPANDING PROSTATE-SPECIFIC T-CELLS --. Reconsideration of this objection is requested.

Priority

The Action objected to the specific reference to earlier filed applications as lacking the status of certain prior applications. Applicants note that the status of nonprovisional parent applications has been updated in the Amendments to the Specification section found on page 2 of this response. As such, Applicants respectfully request that this objection be withdrawn.

Sequence Rules

According to the Examiner, the specification fails to comply with one or more of the requirements of 37 CFR § 1.821-1.825 because certain figures contain sequences which lack description by sequence identifiers. In reply, Applicants have amended the Brief Description of the Drawings section of the specification to identify SEQ ID NOs: for the sequences depicted in

Figures 8, 9, 11 and 12. Applicants respectfully request reconsideration and withdrawal of this objection.

35 U.S.C. § 112, First Paragraph, Enablement

Claims 35-36 and 62-65 stand rejected under 35 U.S.C. § 112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to enable one of skill in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention without undue experimentation.

The Action alleges the specification does not reasonably provide enablement for methods for stimulating and/or expanding T cells using polypeptides encompassed by the claims, or for isolated T cell populations comprising T cells prepared by such methods. More particularly, the Examiner asserts that it is unpredictable as to whether one of skill in the art could make and use the invention in a manner reasonably commensurate with the claims, because the specification allegedly exemplifies only a single peptide contained within SEQ ID NO: 113 (encoded by SEQ ID NO: 110) that stimulates T-cells. The Examiner concludes that it is unknown as to whether any molecules encompassed by the claims, other than SEQ ID NO: 337) actually have the functional property of stimulating T-cells.

Applicants respectfully traverse this basis for rejection and submit the specification fully enables one of skill in the art to make and/or use the presently claimed invention without undue experimentation and with a reasonable expectation of success. Contrary to the Examiner's assertion, Applicants' specification as filed describes numerous fragments of the polypeptide encoded by SEQ ID NO: 110 that have been experimentally determined to be capable of stimulating T-cells. Example 12 of the specification illustrates the generation of a human CTL line using *in vitro* using whole gene priming with P501S cDNA (SEQ ID NO: 110), followed by the identification of active fragments and particular epitopes effective for stimulating the T-cells. *See* pages 153-155 of the instant specification. Using this approach, the following positive fragments of the polypeptide encoded by SEQ ID NO: 110 were identified: amino acid residues 106-553 of SEQ ID NO: 113 (encoded by nucleotide residues 598-1939, as claimed); amino acid residues 136-547 of SEQ ID NO: 113 (encoded by nucleotide residues 688-

1921, as claimed); amino acid residues 351-547 of SEQ ID NO: 113 (encoded by nucleotide residues 1333-1921, as claimed); amino acid residues 351-472 of SEQ ID NO: 113 (encoded by nucleotide residues 1333-1696, as claimed); and amino acid residues 370-379 of SEQ ID NO: 113 (encoded by nucleotide residues 1390-1417, as claimed). Finally, amino acid residues 376-384 of SEQ ID NO: 113 (encoded by nucleotide residues 1408-1432, as claimed) were identified as a minimal 9-mer amino acid sequence of the polypeptide encoded by SEQ ID NO: 110 giving a strong response. As demonstrated by Example 12, this minimal 9-mer sequence, as well as larger fragments comprising the 9-mer sequence, were shown to be capable of stimulating human T-cells.

Applicants thus emphasize that the specification as filed describes and demonstrates numerous examples of polypeptides comprising at least a 9 amino acid fragment of the polypeptide by SEQ ID NO: 110, as claimed, that can be used in methods for stimulating human T-cells. Moreover, additional fragments encompassed by the claimed invention can be identified by the skilled artisan using only routine methodologies described in the specification and/or available in the art. Enablement is not precluded by the necessity for *some* experimentation such as *routine screening*, even if such routine screening is time-intensive. *In re Wands*, 858 F.2d 731, 737, 8 U.S.P.Q.2d 1400, 1406 (Fed. Cir. 1988). In light of the guidance provided by the specification as filed, particularly the general guidance in the form of methods useful for identifying and characterizing T cell-stimulating sequences, and the specific guidance in the form of T cell-stimulating fragments experimentally identified in Example 12, Applicants submit that the skilled artisan could practice the full scope of the claimed invention without undue experimentation and with a reasonable expectation of success. Reconsideration of the Examiner's rejection is respectfully requested.

35 U.S.C. §112, Second Paragraph, Indefiniteness

Claims 35-36 and 62-65 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In particular, the Action alleges "the amino acid sequence encoded by SEQ ID NO:110" in claims 35 and 63 is unclear because the sequence may encode multiple different amino acid sequences. Applicants respectfully traverse this rejection and submit that a patent applicant is not required to list every possible permutation of a nucleic acid sequence that can encode a particular protein for which the amino acid sequence is disclosed, since it is a routine matter to convert back and forth between an amino acid sequence and the sequences of the nucleic acid molecules that can encode it. *In re Wallach*, 378 F.3d 1330, 1334, 71 U.S.P.Q.2d 1939, 1943 (Fed. Cir. 2004).

Furthermore, Applicants submit the specification clearly states SEQ ID NO: 113 is the polypeptide sequence encoded by SEQ ID NO: 110. *See* page 12, lines 20-26 of the instant specification. Applicants submit, upon a brief study of the specification and claims, one of ordinary skill in the art would have no difficulty understanding the metes and bounds of the subject matter that is presently being claimed. As such, Applicants respectfully request this rejection be reconsidered and withdrawn.

Claims 35-36 and 62-65 stand rejected as allegedly being indefinite due to reciting "capable of stimulating a human T cell response." Applicants traverse this basis for rejection and submit the claims, as read in light of the instant specification, unambiguously set forth the metes and bounds of the claimed invention and, moreover, would be easily recognized and understood by an artisan of ordinary skill. However, for purposes of clarity, and without acquiescence to the stated ground for rejection, the claims have been amended to remove this phrase. Reconsideration is respectfully requested.

Claims 35-36 and 62 stand rejected as allegedly being unclear as to the scope of the claims due to the language "specific for a prostate-specific protein." Applicants note that, for purposes of providing further clarity to the claimed invention, the phrase in question has been amended to recite "specific for an amino acid sequence encoded by SEQ ID NO: 110. Applicants traverse this basis for rejection and submit one of skill in the art, upon review of the specification, would easily appreciate the metes and bounds of the claimed invention. Applicants point to lines 11-16, page 92 of the instant specification, which describe that, "T cells are considered to be specific for a prostate-specific polypeptide <u>if the T cells specifically</u>

proliferate, secrete cytokines or kill target cells coated with the polypeptide or expressing a gene encoding the polypeptide. T cell specificity may be evaluated using any of a variety of standard techniques...". Furthermore, lines 12-25, page 108 of the instant specification describe utilizing antigen presenting cells to activate naïve T cells with the antigens of the presently claimed invention. The Action seems to suggest the presently claimed invention must relate to either memory or naïve T cells. However, the specification clearly indicates, and one of skill in the art would understand, both naïve and memory T cell populations *specifically* react to a particular antigen, depending on which receptor complexes are present on the surface of the T cells.

As described in the instant specification, a specific T cell reaction may be initiated by contacting the T cell directly with an antigen of the claimed invention, for example by *ex vivo* manipulation. Alternatively, the specific T cell reaction may be initiated by contacting the T cell indirectly via antigen that has been processed and presented by an antigen presenting cell. As described in the instant specification, the particular T cell populations bearing receptors that specifically interact with an antigen encompassed by the claimed invention are said to be "activated" or "stimulated" and subsequently undergo rapid proliferation, cytokine secretion, and/or lysis of target cells bearing the particular antigen. *See* section entitled "T cells," at lines 24, page 91—lines 13, page 93, also page 106—112 and Examples 7-10, pages 146-152. Applicants respectfully request reconsideration of this rejection.

Claims 62 and 65 also stand rejected as allegedly being indefinite due to the language "amino acid residues encoded by...". Applicants traverse this basis for rejection and submit the claims clearly point out and distinctly claim the subject matter of the present invention. Nonetheless, without acquiescing to the rejection but solely to expedite prosecution of the application, Applicants have amended the claims, as suggested by the Examiner, to recite, "the amino acid sequence encoded by...". Reconsideration and withdrawal of this rejection is respectfully requested.

Drawings

The drawings stand objected to because they include text that is insufficiently large and/or dark to be fully legible. In reply, please find enclosed herewith Replacement Sheets

for Figures 1-12B, which are submitted to be in compliance with 37 C.F.R.§1.21(d), and 37 C.F.R. §1.84(c).

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

The claims in the application are believed to be in condition for allowance. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,

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Amendments to the Drawings:

The attached sheets of formalized drawings include Figs. 1-12B, and replace the original Figs. 1-12B.